USDA United States Department of Agriculture

Natural Resources Conservation Service

Idaho Basin Outlook Report May 1, 2001

Crater Meadows SNOTEL Site, North Fork Clearwater River Basin, Idaho

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, or to subscribe to this publication

Contact - - Your local Natural Resources Conservation Service Office
or
Natural Resources Conservation Service
Snow Surveys
9173 West Barnes Drive, Suite C
Boise, Idaho 83709-1574
(208) 378-5740

Internet Web Address
http://idsnow.id.nrcs.usda.gov/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

May 1, 2001

SUMMARY

April brought cool and wet weather, which delayed snowmelt but did little to overcome the moisture deficit for this water year. The lack of mountain snowpacks and resulting streamflow runoff will affect everyone in the state and the Pacific Northwest in one way or another -- from lack of water for irrigation to higher electricity bills. In certain basins many farmers are preparing for water shortages this year by planting fewer crops or those that use less water or need less water late in the summer. Snow water content levels range from 30-55% of average. April melted about 1/3 of the snow in basins south of the Snake River and resulted in minimal stream increases. The lowest streamflow forecasts are 20-40% of average across southern and central Idaho; some are near their record low volumes (see following table). The highest forecasts are only 60-70% of average in the Henrys Fork basin. Snowmelt streamflow peaks could occur in early to mid-May when warm weather returns. The impacts of lack of snow will soon be felt as snowmelt streamflow peaks are low and streams recede to minimum flow levels by mid-summer. By summer's end, many reservoirs will be at their minimum levels. Conservation and a cool wet summer will help stretch this year's water supplies.

SNOWPACK

May 1 snow water content levels remain low at 30-55% of average across the state. In the April 1 Basin Outlook Report, we reported that snowpacks were at the first or second lowest levels since 1961. Typically the snowpack reaches its maximum water content levels in early April. As a result of the cool wet April weather that delayed the snow melt, the May 1 snowpack is now around the 5th lowest since 1961 in the northern half of Idaho and the 7th for basins south of the Snake River. This does not mean there is more snow in the mountains, it just means that in other years the melt occurred earlier and decreased to lower levels by May 1. Higher elevation snow measuring sites increased from 1-3 inches of snow water in April, while others sites had a net loss of 1-9 inches of snow water. Across most of the state, the May 1 snowpack is about 3/4 of last May, with the exception that this snowpack is the same or better than last year in the Lemhi, Middle Fork Salmon, Owyhee, Bruneau, and Salmon Falls basins. Last year the snowpack melted about 2-3 weeks earlier than normal. This year the snowpack is melting out nearly a month earlier than normal in some areas.

PRECIPITATION

April precipitation ranged from 107% of average in the Bear River basin to 152% in the Salmon basin. Water year to date total percentage totals increased 5-10 percentage points from a month ago. Water year to date amounts now range from a low of 59% of average in the Panhandle Region to a high of 71% in the Bear River basin. April mountainous precipitation amounts ranged from 2-8 inches across the state and were some of the highest precipitation amounts to fall since October 2000.

RESERVOIRS

Typically, storage starts increasing in March and April behind water storage facilities, but not this year. Coeur d'Alene Lake and Little Wood Reservoir increased 38 and 22 percentage points last month to 88% and 97% full, respectively. All other water storage facilities in the state increased less than 10 percentage points in April. This is not a good sign, especially in southern Idaho where 30-40 percent of the snowpack melted in April. The dry soil moisture conditions appear to be absorbing a large quantity of the snow melt water. Here is a reservoir summary from north to south Idaho:

- **Coeur d'Alene, Priest and Pend Oreille lakes** are expected to refill to summer levels. Pend Oreille Lake may be one of the few water storage facilities in the northwest that has available water to release by late summer.
- **Dworshak Reservoir** will not refill and plans call for using this water in July.
- **The Payette reservoir system** will be short of filling and will be at minimum pool levels by summer's end.
- **The Boise reservoir system** will not refill and will be at minimum levels by late August except for Anderson Ranch Reservoir, which will have about 70,000 acre-feet to maintain winter stream levels.
- **Magic Reservoir** is 41% full and will have a 40-45 days irrigation season.
- **Little Wood Reservoir** is nearly full and should be able to provide an adequate water supply for its users.
- **Mackay Reservoir** is 69% full; shortages are expected.

- **The 8 major reservoirs in the upper Snake system** are 80% full. Palisades Reservoir is only 61%. The system will not fill and will be depleted to minimum levels by summer's end, with the possible exception of Jackson Lake.
- **Oakley Reservoir** is 42% full; shortages are expected as irrigation demand is already exceeding inflows as of early May.
- **Salmon Falls Reservoir** is 19% full and will be out of water by the end of July.
- **Wildhorse and Owyhee reservoirs** are about 63% full. **Brownlee Reservoir** is full; however, the inflow forecast is for only 31% of average.

Reservoirs will be drafted early as demands start exceeding inflows. Many reservoirs will be at their minimum storage levels by summer's end and will have very little, if any, carryover for next year.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

About 30-40 percent of the snow melted in the basins south of the Snake River and Bear River in April. Streamflows showed a slight increase but were not very impressive and remain below average. With the remaining snowpack in the basins at 25-45% of average, the peak snowmelt streamflow has probably occurred with the possible exception of the Bruneau River. April streamflow was about 90% of average in the Henrys Fork and headwaters of the Snake River in Wyoming. Elsewhere across Idaho, April streamflow volumes were below to well below normal. May-September streamflow forecasts range from 20-70% of average. These forecasts are near record low levels that occurred in other low snow years of 1977 and 1992. The lowest forecasts call for 20-40% of average in the Weiser, Payette, Boise, Hells Canyon, Big Wood, Little Wood, Bear and American Falls drainages. Some are near record low runoff levels. Whether or not these records are broken will depend upon precipitation mainly in May but also June and July. Many streams will be near their minimum levels by mid- to late summer. As illustrated in the following table, there have been other dry years like the one we are about to experience. We made it through those years and will again. Conservation and wise use are the keys for stretching water supplies as far as possible this year.

This table compares the April 1, 2001 streamflow forecasts published last month to the observed minimum volumes and the year they occurred. It allows users to compare this year's forecasts to the observed minimum for the analyzed period of record. The forecasts in this May 1, 2001, Basin Outlook Report are based on May 1 data and for the May-July or May-September period.

Streamflow Forecast Point	April 1, 2001 April-July Forecast as Percent of Average	April-July Minimum Volumes as Percent of Average and Year
Kootenai at Leonia	52%	48% in 1944
Coeur D'Alene at Enaville	53	33% in 1992
St. Joe at Calder	53	43% in 1941
Dworshak Reservoir Inflow	52	46% in 1977
Clearwater at Spalding	51	48%in 1977
Salmon at White Bird	52	37% in 1977
Weiser nr Weiser	25	11% in 1977
Payette nr Horseshoe Bend	31	22% in 1977
Boise nr Boise	38	23% in 1977
Big Wood blw Magic Dam	18	7% in 1992
Big Lost blw Mackay Resv.	47	30% in 1992
Little Lost blw Wet Creek	65	39% in 1961
Henrys Fork nr Ashton	67	58% in 1977
Snake River nr Heise	60	34% in 1977
Oakley Reservoir Inflow	40	12% in 1992
Salmon Falls Creek	46	13% in 1934
Hells Canyon Dam	33	
Bear River blw Stewart Dam	20	1977

RECREATION

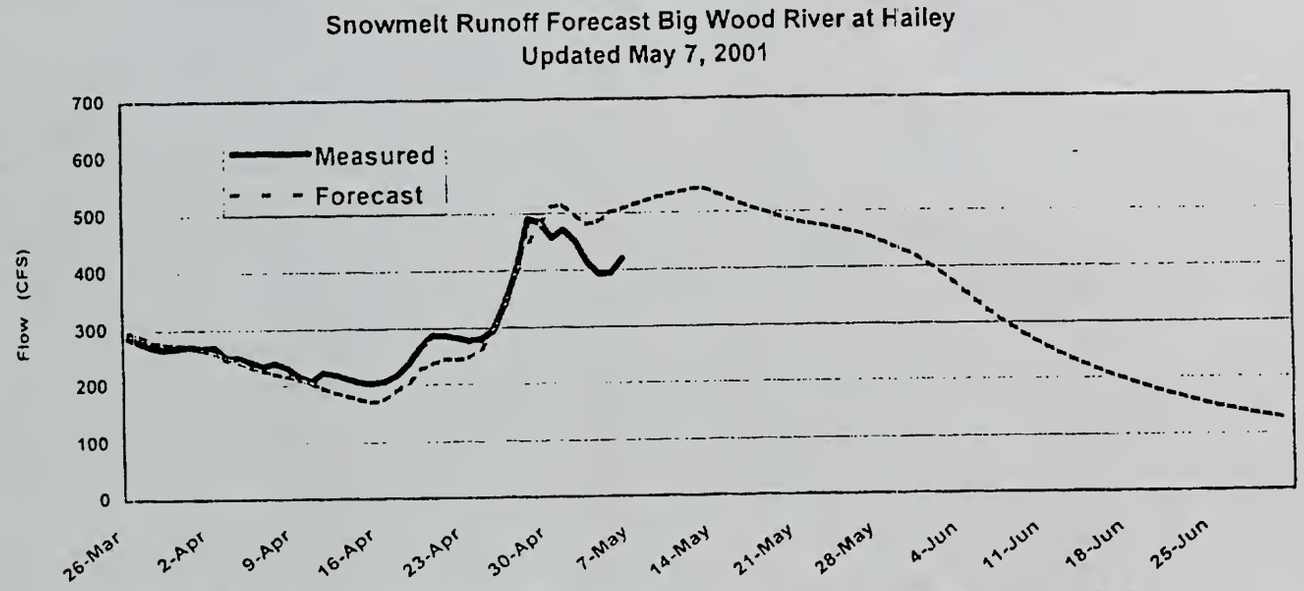
River runners should be getting their boats ready as peak flows will occur in early to mid- May when temperatures reach 70 F and higher in the Boise area for a week or so. There is not much snow in the mountains to sustain peak flows once they start – the high water season will be low and short-lived, and then streams will return to low summer baseflow levels earlier than normal, especially on tributary rivers. This also means a longer season on the main Salmon River and Payette River. Middle Fork Salmon River floaters may want to fly into Indian Creek and can expect to see the river at a gage height of 2.0 feet or less by July 4th. Go early for the big water of the season, but be prepared as the water temperature is 48 F on the Salmon River near Riggins and colder on the headwater streams. Another benefit of this low snow year is that hikers and campers will be able to access mountainous regions much earlier than normal too.

TIPS FOR STRETCHING SHORT WATER SUPPLIES

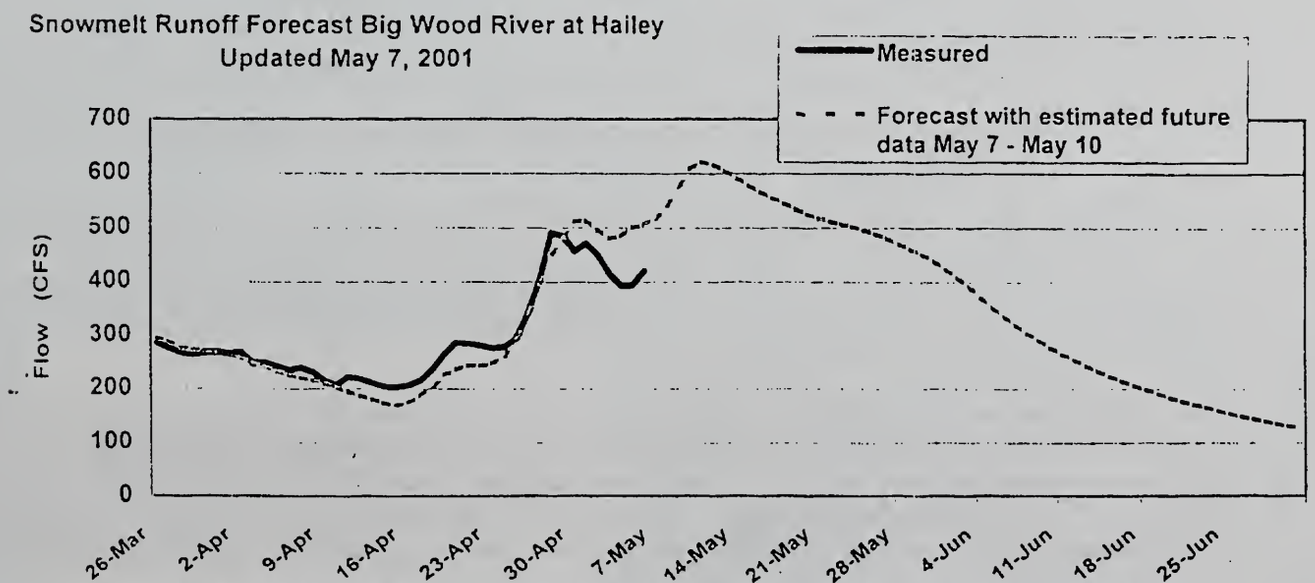
NRCS offers practical tips for stretching short water supplies. More information about this is available on our Internet Web page at: http://id.nrcs.usda.gov/drought_tips2.pdf

BIG WOOD RIVER AT HAILEY SNOWMELT RUNOFF MODEL

This peak streamflow model is updated once or twice a week until the snowmelt peak streamflow occurs. Most current graphs and series of model runs are available on this Internet Web page at: http://id.nrcs.usda.gov/snow/water.htm under Peakflow Streamflow Information.



Measured is PROVISIONAL USGS Data. Forecast flow is computed from actual snowmelt data through May 7 and average snowmelt for the remaining season. Snowmelt rates are used in model; future precipitation is not included and is added in model as it falls.



Measured is PROVISIONAL USGS Data. Forecast flow is computed from actual snowmelt data through May 7. Future meltrate rates were estimated for the May 7-10 period based on short term weather forecasts and current melt rates. Future precipitation is not included and is added in model as it falls.

NOTE: Departure of 'Forecast' Flow from 'Measured' Flow is due to diversions above Hailey stream gage that were started in early May. This diverted flow is not included in 'Measured'

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of May 1, 2001

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

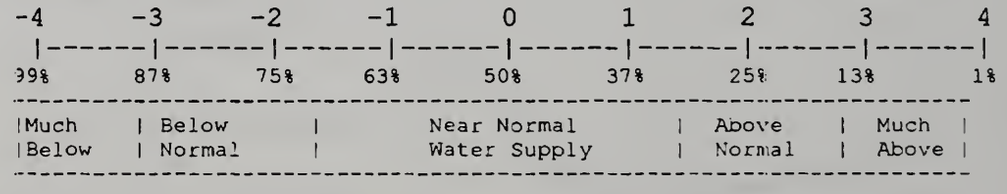
SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Dept. of Water Resources
PacifiCorp

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-2.9	1988	NA
CLEARWATER	-3.8	1977	NA
SALMON	-3.3	1994	NA
WEISER	-3.8	1977/92	NA
PAYETTE	-3.8	1977/92	NA
BOISE	-3.2	1987/91	-2.6
BIG WOOD	-2.9	1990/94	-1.4
LITTLE WOOD	-2.6	1990/91	-2.1
BIG LOST	-2.9	1977/90	-0.8
LITTLE LOST	-2.7	1987/88	0.0
HENRYS FORK	-2.0	1990/91	-3.3
SNAKE (AMERICAN FALLS)	-2.2	1987/91	-2.0
OAKLEY	-1.3	1981/89	0.0
SALMON FALLS	-2.9	1991	0.0
BRUNEAU	-2.0	1988/91	NA
OWYHEE	-1.1	1994	NA
BEAR RIVER	-2.4	1989	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

IMPORTANT NOTICE - REVISION OF MAILING LIST

The Idaho Basin Outlook Report is published and distributed as a public service by the USDA, Natural Resources Conservation Service from January to May each year. The June report is not mailed to recipients and is available via the Internet. In order to maintain current mailing information, control the cost of this publication and ensure maximum use of the information, we are required to examine our circulation annually. This notice is required by the congressional joint committee for the annual revision of free mailing lists.

The Idaho Basin Outlook Report is available on the Internet at http://idsnow.id.nrcs.usda.gov/ and allows you to obtain the Basin Outlook Reports several days before you receive it in the mail. Additional water supply products and most current snowpack information are also available on the Internet.

Please mark the box [ ] for the BASIN REPORT(S) you would like to receive. If you check more than one basin you will automatically receive the report for all basins.

[ ] G - General Outlook Report (mailed to all recipients)

[ ] #1 - Panhandle Region

[ ] #2 - Clearwater River Basin

[ ] #3 - Salmon River Basin

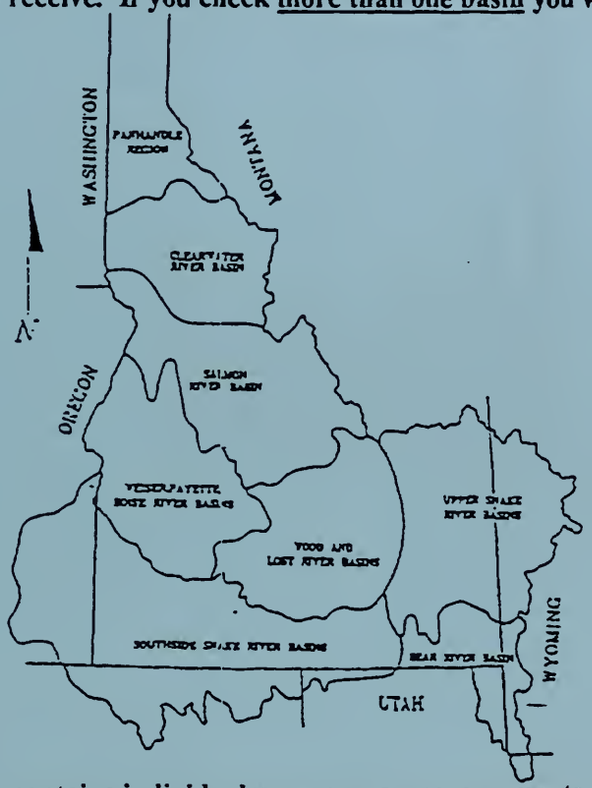
[ ] #4 - Weiser, Payette, Boise River Basins

[ ] #5 - Wood and Lost River Basins

[ ] #6 - Upper Snake River Basin

[ ] #7 - Southside Snake River Basins

[ ] #8 - Bear River Basin



[ ] - Annual Data Summary Report - published after each water year: contains individual snow course measurements, snow water equivalent and precipitation data from SNOTEL (SNOw TELemetry) stations, and the 1961-90 averages.

==========

[ ] Check if you selected different basins than you currently receive.

[ ] Check if you no longer wish to receive the Idaho Basin Outlook Report.

[ ] Check if you prefer Internet access and can be removed from our mailing list.

NAME:
AFFILIATION:
ADDRESS:

G12345678
NATIONAL AGRICULTURAL LIBRARY
CURRENT SERIAL RECORDS / ROOM 002
10301 BALTIMORE AVENUE
BELTSVILLE MD 20705-2351

IS YOUR ADDRESS CORRECT?
[ ] YES [ ] NO
If NO, please make corrections.

Fold Here

Fold Here

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
9173 West Barnes Drive, Suite C
Boise, ID 83709-1574

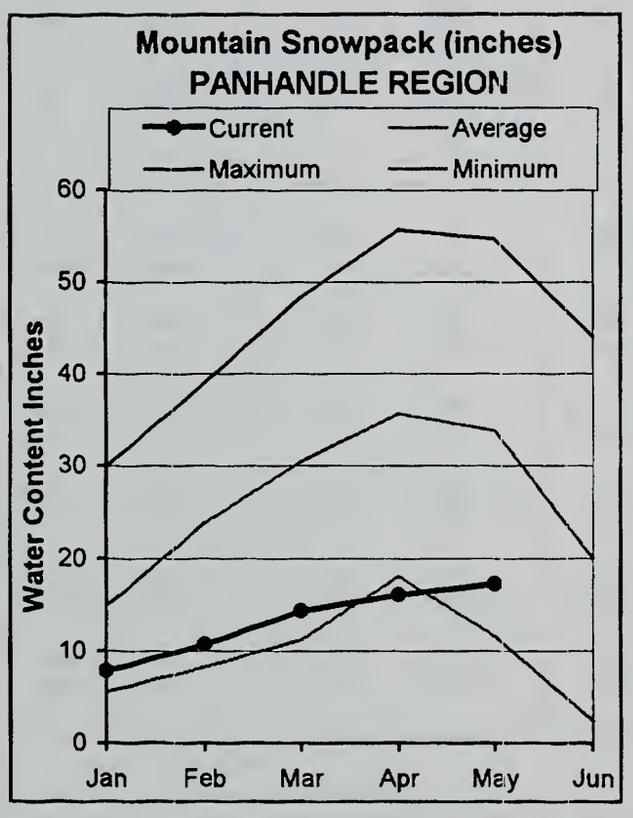
Postage Required

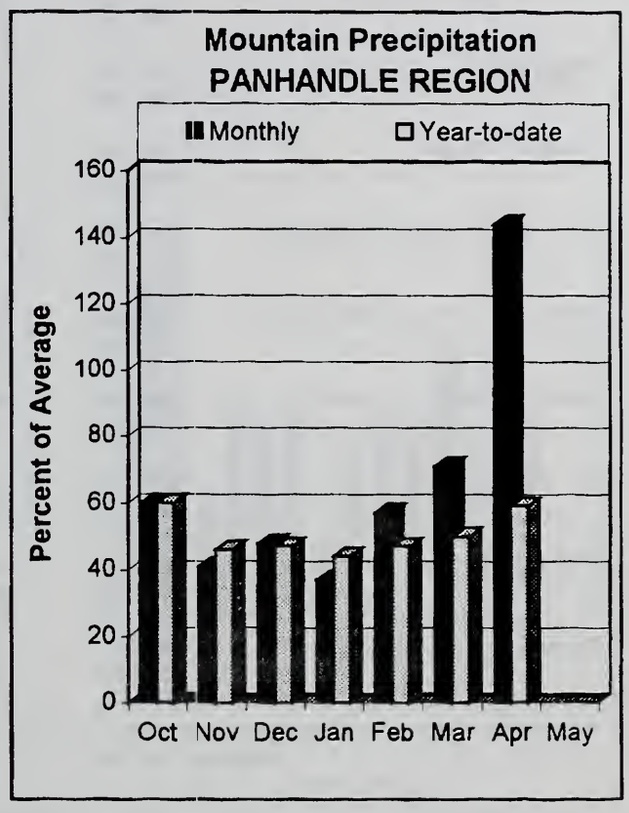
AN EQUAL OPPORTUNITY EMPLOYER

USDA Natural Resources Conservation Service
Snow Survey Office
9173 West Barnes Drive, Suite C
Boise, ID 83709-1574

Tape Here

PANHANDLE REGION
MAY 1, 2001





WATER SUPPLY OUTLOOK

Snow water content levels remain at or near record low levels and are currently about half of normal. April precipitation was 144% of average -- first time monthly precipitation has been above average since September 2000. Water year to date precipitation is the lowest in the state at 59% of average. Higher elevation snow measuring sites increased 2-3 inches of snow water during April, but mid-elevation sites had a net loss. A few sites have even melted out already. Smith Creek, a long-term snow course located about 25 miles northwest of Bonners Ferry, is the 4th lowest since records started in 1937. April 1 snow water content levels, which are typically the peak, were at record low levels. Streamflow forecasts call for only 50-60% of average flow. Coeur d'Alene Lake is 88% and Priest Lake is 58% of their normal summertime levels and are expected to refill to summer levels. Pend Oreille Lake is 51% of its summer level and is projected to refill, but the time period the lake remains full depends on future demands and releases from the lake. Pend Oreille Lake may be one of the few water storage facilities in the Pacific Northwest that has available water to release by late summer. Hungry Horse and Libby Dam projects will not refill this year. This will be one of the drier years on record; regulated and unregulated streams will be below normal after the remaining snow melts.

PANHANDLE REGION
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	MAY-JUL	2865	3391	3630	57	3869	4395	6390
	MAY-SEP	3359	3944	4210	56	4476	5061	7466
MOYIE RIVER at Eastport	MAY-JUL	148	176	195	56	214	242	347
	MAY-SEP	155	185	205	57	225	255	361
SMITH CREEK	MAY-JUL	43	54	61	58	68	79	105
	MAY-SEP	43	56	64	58	72	85	111
BOUNDARY CREEK	MAY-JUL	36	45	52	51	59	68	103
	MAY-SEP	38	48	55	51	62	72	108
PEND OREILLE Lake Inflow (2)	MAY-JUL	4271	5169	5780	52	6391	7289	11070
	MAY-SEP	4705	5702	6380	52	7058	8055	12290
PRIEST near Priest River (1,2)	MAY-JUL	238	315	350	56	385	462	626
	MAY-SEP	246	338	380	56	422	514	679
COEUR D'ALENE at Enaville	MAY-JUL	146	217	265	56	313	384	472
	MAY-SEP	165	239	290	57	341	415	511
ST. JOE at Calder	MAY-JUL	342	424	480	55	536	618	881
	MAY-SEP	371	457	515	54	573	659	949
SPOKANE near Post Falls (2)	MAY-JUL	568	801	960	55	1119	1352	1747
	MAY-SEP	602	845	1010	55	1175	1418	1840
SPOKANE at Long Lake (2)	MAY-JUL	600	867	1048	53	1229	1496	1972
	MAY-SEP	718	999	1190	54	1381	1662	2195

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2046.0	2323.0	2043.0
FLATHEAD LAKE	1791.0	1000.0	1064.0	937.2
NOXON RAPIDS	335.0	324.4	320.6	208.7
PEND OREILLE	1561.3	791.4	934.5	927.0
COEUR D'ALENE	238.5	209.5	334.5	246.7
PRIEST LAKE	119.3	69.0	109.8	97.9

PANHANDLE REGION
Watershed Snowpack Analysis - May 1, 2001

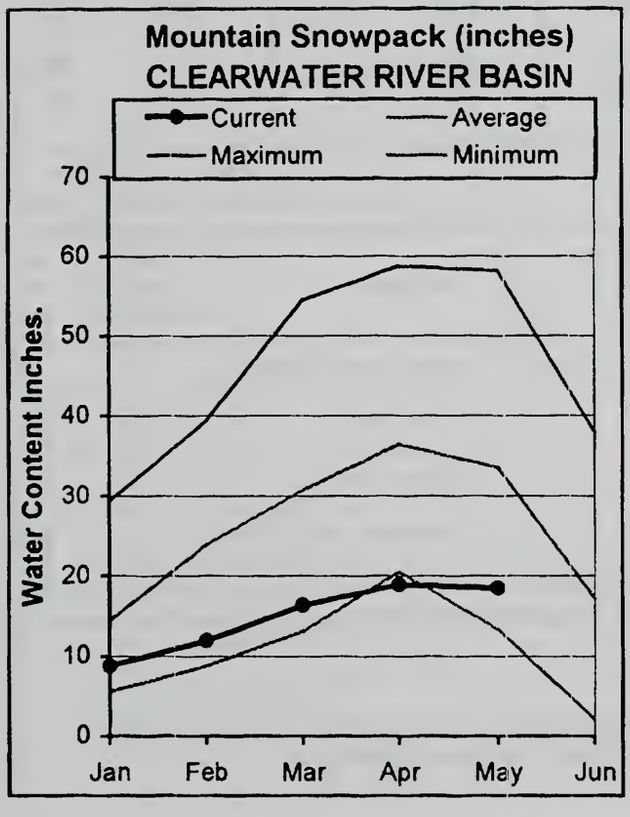
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	32	68	59
Moyie River	10	70	59
Priest River	5	55	54
Pend Oreille River	91	87	67
Rathdrum Creek	3	94	64
Hayden Lake	0	0	0
Coeur d'Alene River	7	68	59
St. Joe River	3	65	49
Spokane River	12	69	56
Palouse River	1	0	0

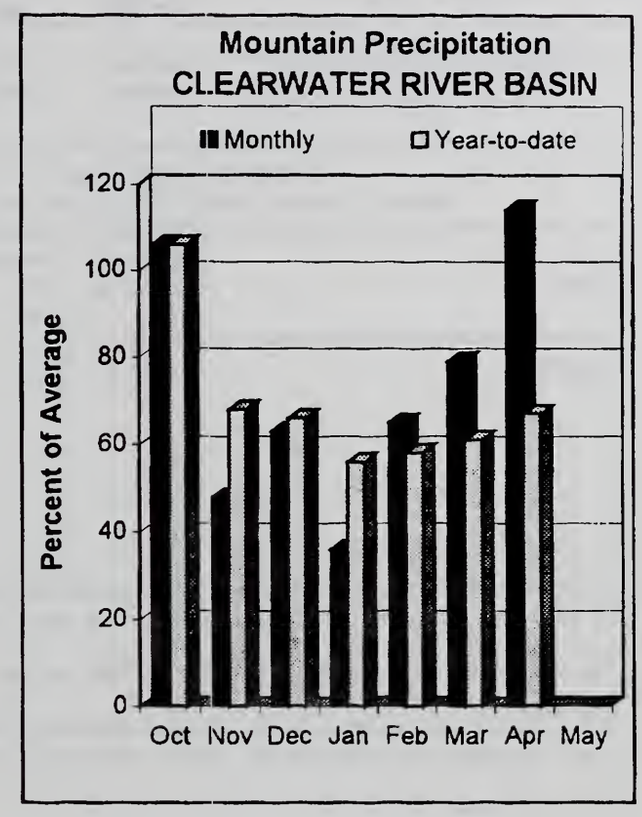
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
MAY 1, 2001





WATER SUPPLY OUTLOOK

The snowpack is about 50% of average in the Clearwater basin. Snow water content levels were at record low levels on April 1, which is typically the peak of the snow season. May 1 snow levels are about the 5th lowest since 1961 as a result of the cool and wet April that delayed the snow melt. This does not mean there is more snow in the mountains. It just means that in other years the melt occurred earlier and decreased to lower levels by May 1. Four SNOTEL sites increased 1-2 inches of snow water in April; others had a net loss of 1-9 inches of snow water. April monthly precipitation was 114% of average. Water year to date precipitation is 67% of average. Dworshak Reservoir is 62% full. It will not refill this year; the inflow forecast calls for only 52% of average. Maximum storage level will depend upon timing of the snowmelt and releases. Current plans are to release more water in July from Dworshak Reservoir. The Clearwater River at Spalding is forecast at 47% of average. Warm temperatures in mid and late April started the snow melting and generated a rise in the streamflow. Water users and river runners should be ready as the high water season will be of short duration and streams will return to low summer baseflow levels much earlier than normal.

CLEARWATER RIVER BASIN
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<=== Drier ===== Future Conditions ======= Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (1,2)	MAY-JUL	589	913	1060	52	1207	1531	2028
	MAY-SEP	657	996	1150	52	1304	1643	2200
CLEARWATER at Orofino (1)	MAY-JUL	1434	1868	2065	54	2262	2696	3826
	MAY-SEP	1426	1903	2120	52	2337	2814	4087
CLEARWATER at Spalding (1,2)	MAY-JUL	1715	2461	2800	47	3139	3885	5972
	MAY-SEP	1859	2658	3020	47	3382	4181	6405

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2391.6	2360.8	2309.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - May 1, 2001

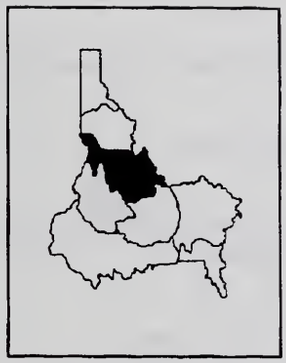
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	65	56
Lochsa River	3	83	51
Selway River	4	96	55
Clearwater Basin Total	16	71	55

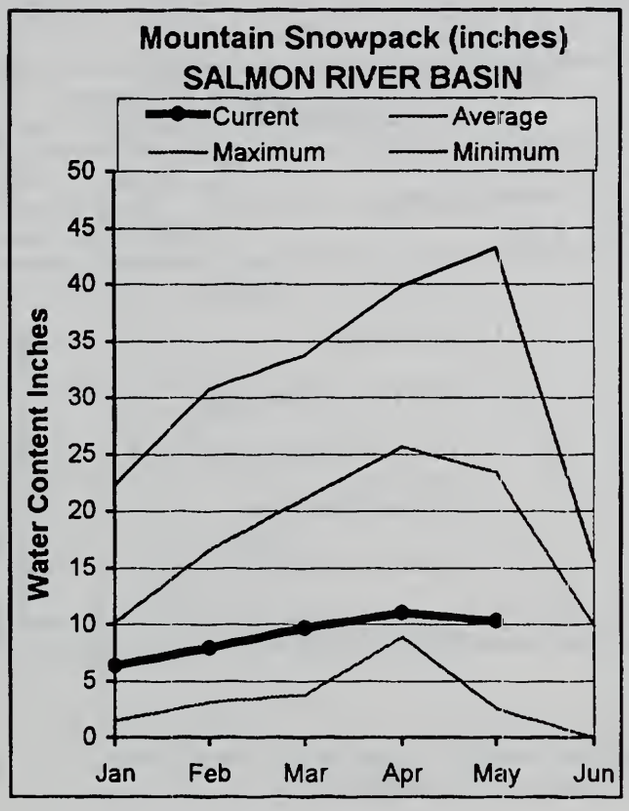
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

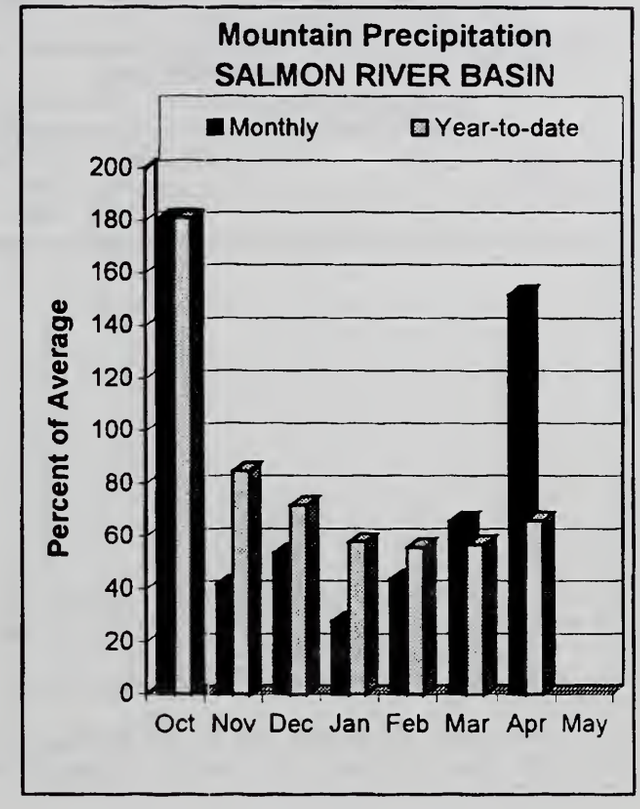
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
MAY 1, 2001







WATER SUPPLY OUTLOOK

April precipitation was 152% of average, the first month with above average precipitation since October 2000. Snowpack percentages range from 34% of average in the Little Salmon River to 64% for the Lemhi River. Overall the Salmon basin snowpack is 50% of average. High elevation sites increased 1-3 inches of snow water during April, but mid-elevation sites lost 1-3 inches. The snowpack is ripe and will not take much energy to start melting again; not much snow is left. There is still enough snow to generate another rise in stream levels. The May-September streamflow forecasts call for 36% of average for the Salmon River at Salmon and 49% for the Salmon River at White Bird. The lack of high water season will ensure a long floating season on the Salmon River. The Salmon River tributaries will see an earlier return to low flow conditions as a result of this year's meager snowpack, and many tributaries will be very low by summer's end.

SALMON RIVER BASIN
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	MAY-JUL	155	240	278	36	316	401	772
	MAY-SEP	194	289	332	36	375	470	922
SALMON at White Bird (1)	MAY-JUL	1820	2349	2590	49	2831	3360	5284
	MAY-SEP	2034	2633	2905	49	3177	3776	5930

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - May 1, 2001

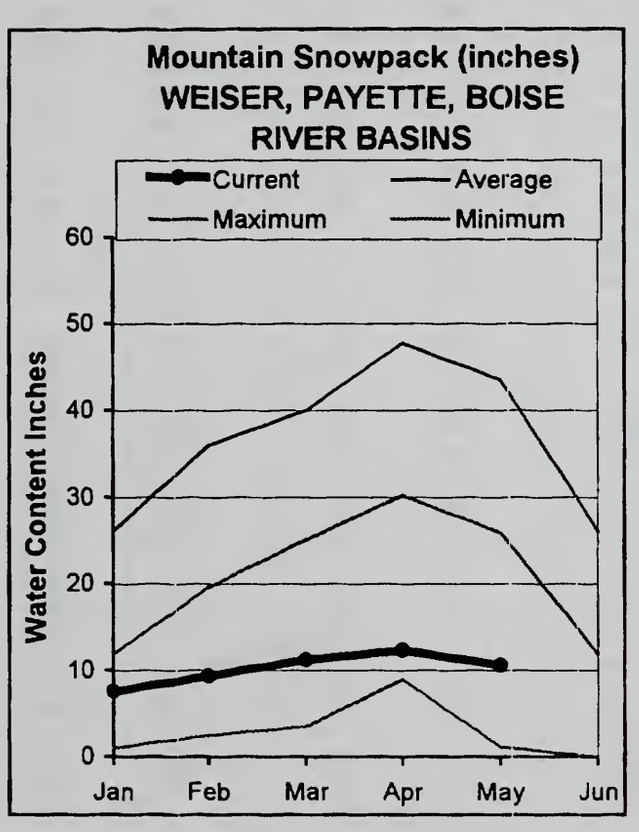
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	7	84	47
Lemhi River	6	106	64
Middle Fork Salmon River	3	75	41
South Fork Salmon River	3	62	38
Little Salmon River	4	66	34
Salmon Basin Total	23	81	48

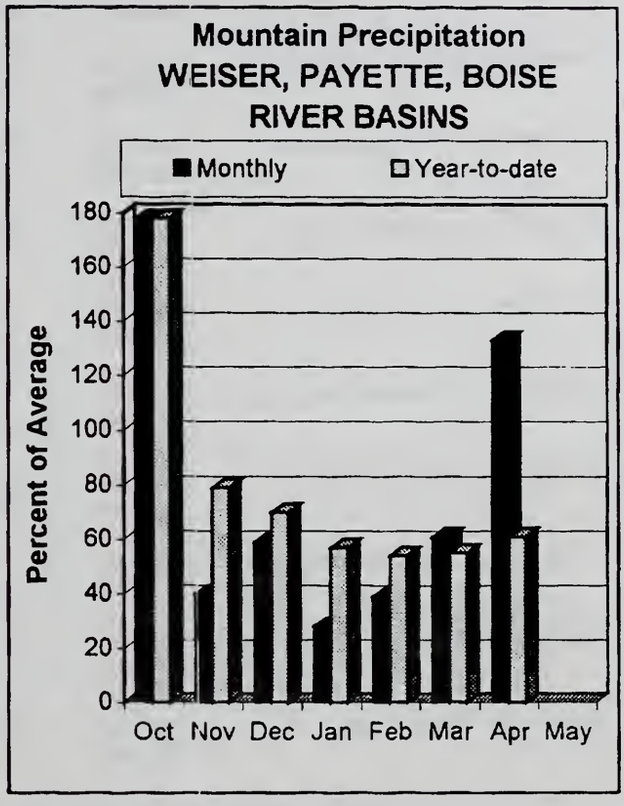
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS MAY 1, 2001





WATER SUPPLY OUTLOOK

April precipitation was 133% of average, which helped, but did little to overcome this winter's moisture deficit. Cool and wet April weather helped to delay the snowmelt in the higher elevations but mid- elevations are nearly depleted. Snowline elevation was an average of 7,100 feet in the Boise basin the last week of April. The May-September streamflow forecast calls for 25% of average for the Weiser River, 32% for the Payette River at Horseshoe Bend and 37% for the Boise River near Boise. The Weiser basin snowpack is only 27% of average. The snowmelt streamflow peak has already occurred, and the stream is returning to low flow conditions already. Shortages are expected and water users should prepare for low flow levels for the rest of the season. The Payette basin snowpack is only slightly better at 39% of average. The Payette reservoir system is 67% full, will not refill, and will be at minimum levels by summer's end. Water supplies will be marginal for the Payette irrigators with some shortages occurring in September for junior water right holders. Boise basin snowpack is 44% of average. The reservoir system is 65% full and will not refill. Lucky Peak and Arrowrock reservoirs will be at minimum storage levels by late August. Anderson Ranch Reservoir will have about 70,000 acre-feet to maintain winter stream levels. Junior or reservoir storage water users will run out of water by late August. Senior water users should be okay. There is still enough snow to generate another streamflow rise, but with temperatures reaching into the 70s, the remaining snowpack won't last long.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	MAY-JUL	3.0	31	63	25	95	166	250
	MAY-SEP	3.0	36	70	25	104	179	279
SF PAYETTE at Lowman	MAY-JUL	146	171	188	50	205	230	375
	MAY-SEP	170	197	215	50	233	260	431
DEADWOOD RESERVOIR Inflow (1,2)	MAY-JUL	25	40	47	39	54	69	120
	MAY-SEP	28	44	51	40	58	74	127
LAKE FORK PAYETTE near McCall	MAY-JUL	28	34	38	50	42	48	76
	MAY-SEP	30	36	40	50	44	50	80
NF PAYETTE nr Cascade (1,2)	MAY-JUL	32	98	128	31	158	224	407
	MAY-SEP	39	110	142	32	174	245	442
NF PAYETTE nr Banks (2)	MAY-JUL	55	117	159	31	201	263	512
	MAY-SEP	65	132	178	32	224	291	554
PAYETTE nr Horseshoe Bend (1,2)	MAY-JUL	177	344	420	32	496	663	1304
	MAY-SEP	195	377	460	32	543	725	1442
BOISE near Twin Springs (1)	MAY-JUL	123	182	209	41	236	295	509
	MAY-SEP	156	220	249	44	278	342	564
SF BOISE at Anderson Ranch Dam (1,2)	MAY-JUL	43	108	138	32	168	233	432
	MAY-SEP	49	118	150	32	182	251	469
MORES CREEK near Arrowrock Dam	MAY-JUL	18.0	29	37	48	45	56	77
	MAY-SEP	20	32	40	49	48	60	82
BOISE near Boise (1,2)	MAY-JUL	199	341	405	37	469	611	1090
	MAY-SEP	227	377	445	37	513	663	1204

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	8.0	11.1	10.2
CASCADE	693.2	468.0	564.4	430.6
DEADWOOD	161.9	101.0	135.4	102.8
ANDERSON RANCH	450.3	250.8	367.2	327.0
ARROWROCK	272.2	193.6	274.3	204.0
LUCKY PEAK	293.2	218.8	260.3	195.5
LAKE LOWELL (DEER FLAT)	165.2	94.2	139.3	155.5

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2001

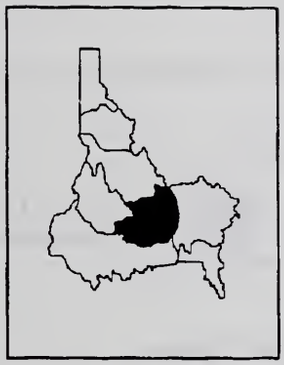
Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Mann Creek	1	85	43
Weiser River	3	67	27
North Fork Payette	8	59	36
South Fork Payette	4	68	38
Payette Basin Total	13	64	38
Middle & North Fork Boise	6	66	45
South Fork Boise River	7	61	44
Mores Creek	4	83	47
Boise Basin Total	13	67	44
Canyon Creek	1	0	0

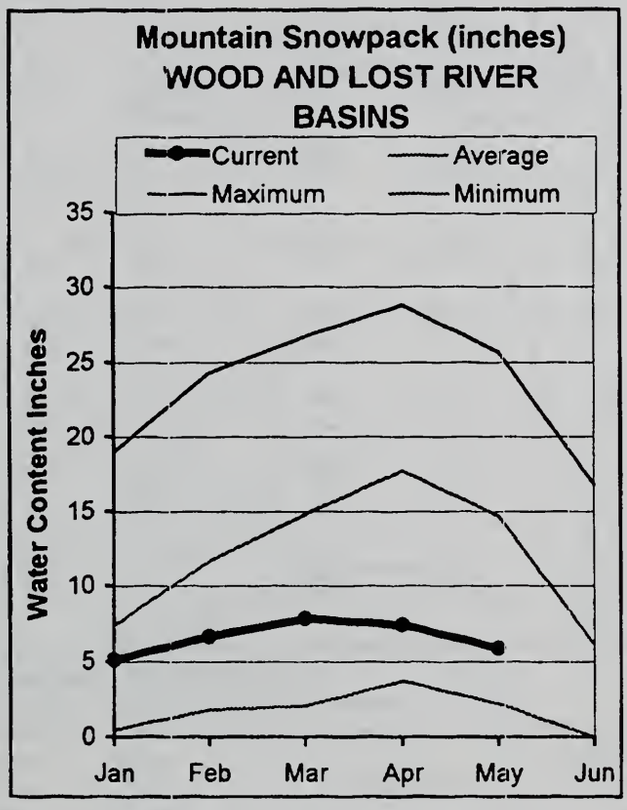
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

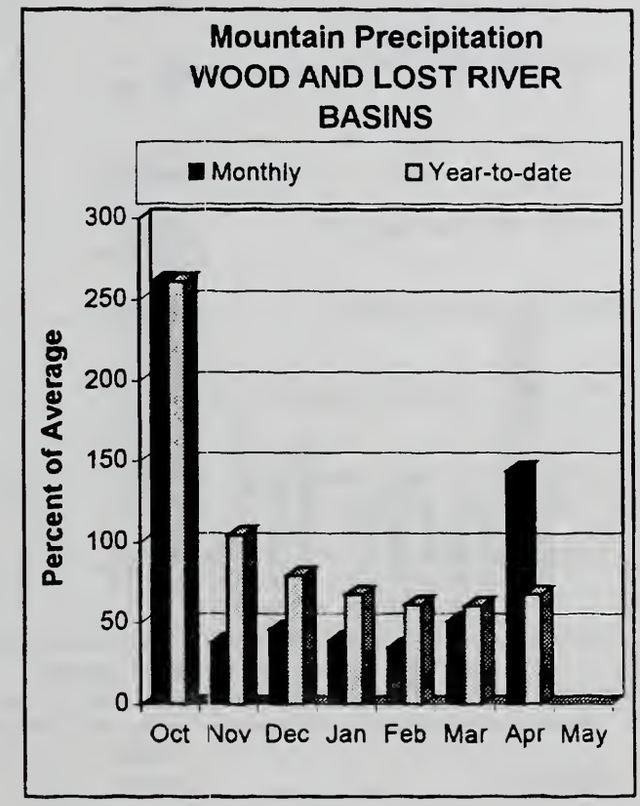
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
MAY 1, 2001







WATER SUPPLY OUTLOOK

The snowpack ranges from 37% of average in the Big Wood basin to 50% in the Little Wood, Big Lost and Little Lost basins. April brought precipitation in the 144% of average range with snow falling in mid-April above 6,500 feet. Streamflow forecasts call for 21% of average for Magic Reservoir Inflow. Magic Reservoir is 41% full and will only have a 40-45 day water supply. Little Wood River is forecast at 37% of average. Little Wood Reservoir is nearly full and should be able to provide a marginal water supply for its users as a result of conversion from flood to more efficient sprinkler irrigation. Mackay Reservoir is 69% full; the inflow forecast is 44% of average. Shortages are expected. The Little Lost River is forecast at 62% of average; instream water diverts will experience low stream levels this summer and shortages are expected. A peak flow forecast model for the Big Wood River at Hailey, sponsored by the Blaine Soil Conservation District, shows there is still the potential for another peak in early May. This model is updated weekly and is on our Internet Web page at: http://idsnow.id.nrcs.usda.gov/snow/water.htm

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	MAY-JUL	48	72	85	38	99	133	224
	MAY-SEP	56	84	98	38	113	151	257
BIG WOOD near Bellevue	MAY-JUL	7.0	18.0	28	18	40	62	156
	MAY-SEP	11.0	23	34	20	47	70	170
CAMAS CREEK near Blaine	MAY-JUL	1.0	4.1	7.4	18	11.7	19.7	42
	MAY-SEP	1.1	4.4	7.8	18	12.2	20	43
BIG WOOD below Magic Dam (2)	MAY-JUL	2.0	12.0	42	21	72	116	201
	MAY-SEP	2.0	17.0	48	22	79	125	216
LITTLE WOOD near Carey (2)	MAY-JUL	5.9	16.7	24	37	31	42	65
	MAY-SEP	7.7	19.2	27	37	35	46	73
BIG LOST at Howell Ranch	MAY-JUL	56	70	80	47	90	104	169
	MAY-SEP	67	84	95	49	106	123	195
BIG LOST below Mackay Reservoir (2)	MAY-JUL	37	51	61	44	71	85	139
	MAY-SEP	49	65	75	44	85	101	171
LITTLE LOST blw Wet Creek	MAY-JUL	9.8	13.9	16.7	62	19.5	24	27
	MAY-SEP	12.6	17.9	22	61	25	30	35
LITTLE LOST nr Howe	MAY-JUL	11.6	13.6	15.0	56	16.4	18.4	27
	MAY-SEP	15.5	18.8	21	55	23	27	38

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	78.2	189.2	159.9
LITTLE WOOD	30.0	29.2	29.8	25.2
MACKAY	44.4	30.7	39.2	34.3

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - May 1, 2001

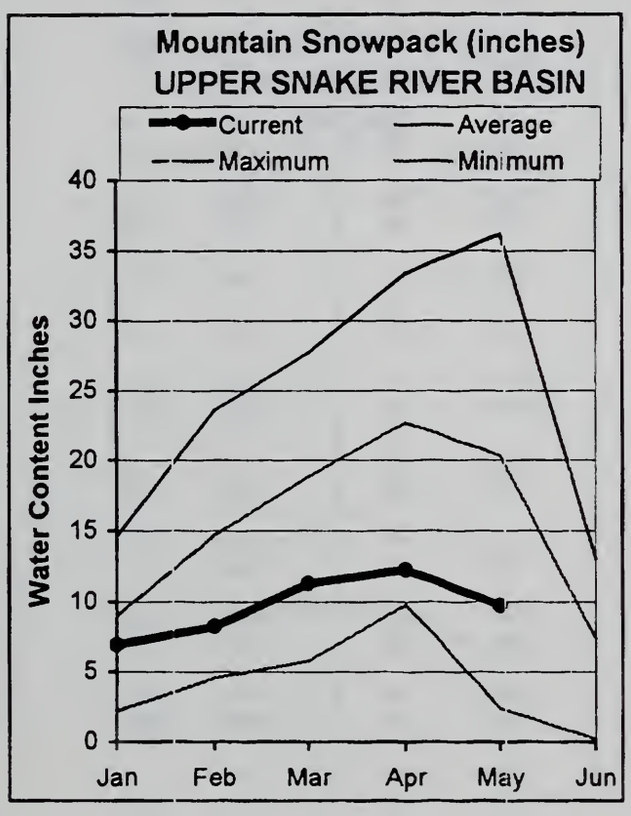
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	7	59	38
Camas Creek	3	0	0
Big Wood Basin Total	9	57	37
Little Wood River	4	73	50
Fish Creek	0	0	0
Big Lost River	5	75	48
Little Lost River	3	104	51
Birch-Medicine Lodge Cree	2	102	63

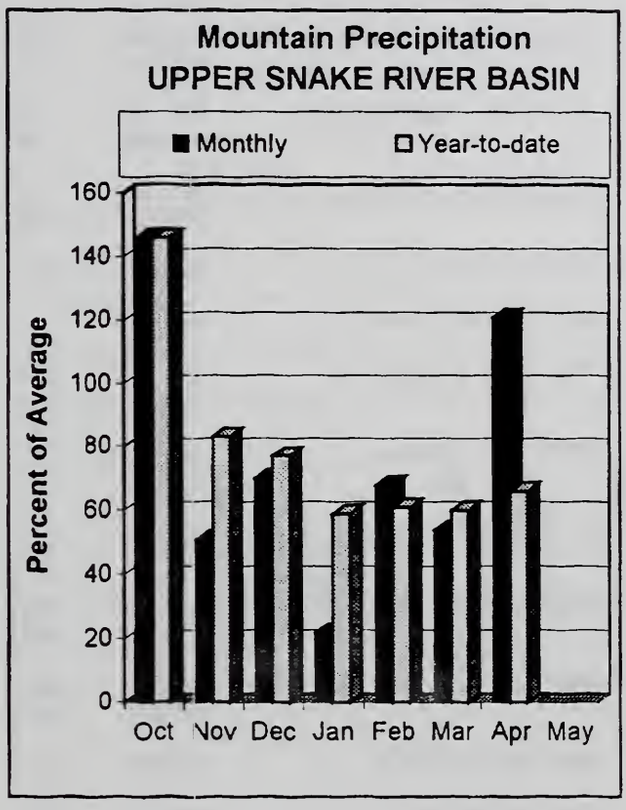
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
MAY 1, 2001





WATER SUPPLY OUTLOOK

Mid- elevation drainages such as Willow, Blackfoot and Portneuf are just about melted out. The remaining snowpack ranges from 36% of average in the Salt basin to 63% in the Gros Ventre basin. The Snake basin above Palisades Reservoir is 48% of average and decreases to 43% for the Snake basin above American Falls Reservoir. April precipitation was 121% of average and is 66% for the water year. Henrys Lake, Island Park and American Falls reservoirs are full, but Palisades Reservoir is only 61% full. The 8 major reservoirs in the upper Snake system are 80% full. The reservoir system will not fill as a whole and will be depleted to minimum levels by summer's end, with the possible exception of Jackson Lake. Streamflow forecasts range from 40-70% of average in these basins. Water shortages will occur but will not be wide spread and depends on water right and water source. Natural streamflow users should be prepared for well below normal runoff volumes as summer baseflow levels will occur much earlier due to near record low snow levels. Irrigators should remain in contact with their local irrigation districts for more specific information.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	MAY-JUL	211	255	285	66	315	359	432
	MAY-SEP	317	371	408	66	445	499	618
HENRYS FORK near Rexburg (2)	MAY-JUL	457	560	630	62	700	803	1016
	MAY-SEP	630	749	830	62	911	1030	1339
FALLS near Squirrel (1,2)	MAY-JUL	156	201	222	69	243	288	322
	MAY-SEP	205	251	272	70	293	339	390
TETON near Driggs	MAY-JUL	66	81	91	70	101	116	130
	MAY-SEP	93	112	124	70	136	155	177
TETON near St. Anthony	MAY-JUL	174	204	225	68	246	276	330
	MAY-SEP	218	255	280	68	305	342	410
SNAKE near Moran (1,2)	MAY-SEP	348	435	475	58	515	602	814
PACIFIC CREEK at Moran	MAY-SEP	60	77	88	56	99	116	157
SNAKE above Palisades (2)	MAY-JUL	1156	1275	1355	64	1435	1554	2115
	MAY-SEP	1349	1490	1585	64	1680	1821	2475
GREYS above Palisades	MAY-JUL	120	141	156	53	171	192	295
	MAY-SEP	142	166	182	52	198	222	350
SALT near Etna	MAY-JUL	60	94	117	45	140	174	260
	MAY-SEP	93	131	156	46	181	219	339
PALISADES RESERVOIR INFLOW (1,2)	MAY-JUL	1335	1610	1735	60	1860	2135	2891
	MAY-SEP	1592	1910	2055	60	2200	2518	3428
SNAKE near Heise (2)	MAY-JUL	1509	1709	1845	60	1981	2181	3074
	MAY-SEP	1811	2042	2200	60	2358	2589	3672
BLACKFOOT RESV INFLOW	MAY-JUN	7.4	23	34	42	44	60	80
SNAKE nr Blackfoot (1,2)	MAY-JUL	1202	1865	2166	54	2467	3130	3981
	MAY-SEP	1759	2475	2800	56	3125	3841	5019
PORTNEUF at Topaz	MAY-JUL	16.0	23	28	51	33	40	55
	MAY-SEP	30	35	39	51	43	48	76
AMERICAN FALLS RESV INFLOW (1,2)	MAY-JUL	26	696	1000	41	1304	1974	2463
	MAY-SEP	27	720	1110	41	1500	2359	2700

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of April

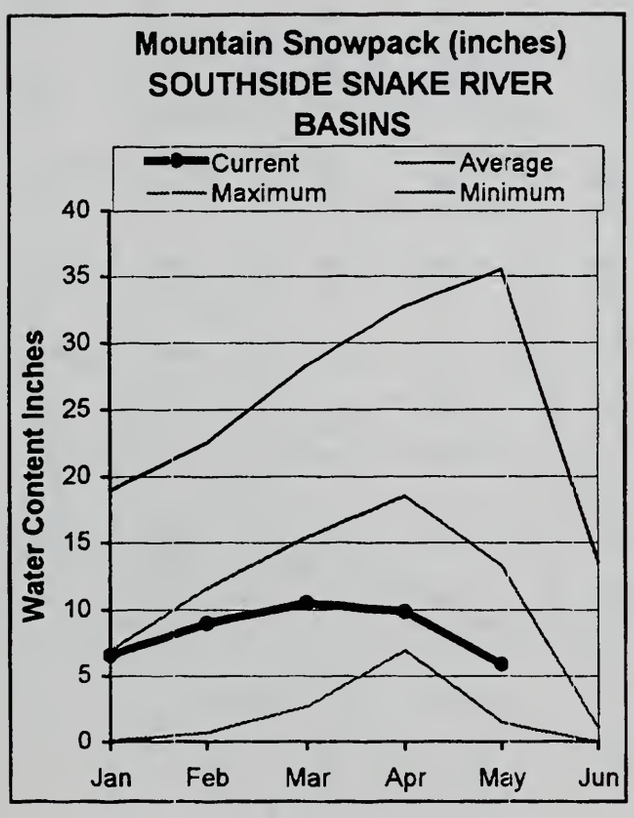
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	89.5	88.7	82.3
ISLAND PARK	135.2	133.8	132.5	125.7
GRASSY LAKE	15.2	13.4	13.0	11.7
JACKSON LAKE	847.0	663.4	716.6	456.5
PALISADES	1400.0	858.8	1161.1	950.0
RIRIE	80.5	52.8	67.9	53.5
BLACKFOOT	348.7	239.3	306.5	273.0
AMERICAN FALLS	1672.6	1633.8	1672.0	1547.0

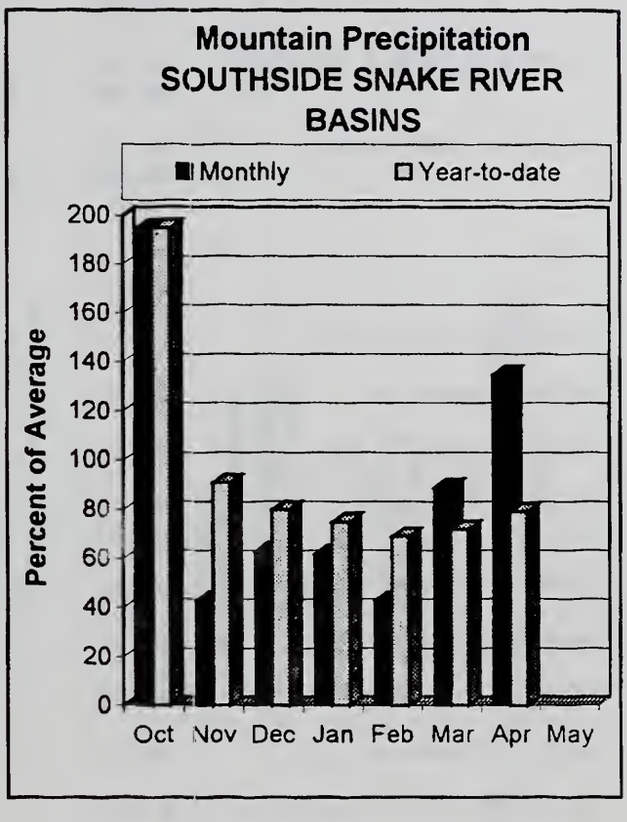
UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - May 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Camas-Beaver Creeks	2	93	32
Henrys Fork-Falls River	10	75	42
Teton River	8	91	48
Henrys Fork above Rexburg	18	81	45
Snake above Jackson Lake	6	85	46
Gros Ventre River	2	85	63
Hoback River	6	87	54
Greys River	4	77	56
Salt River	5	66	36
Snake above Palisades	23	81	48
Willow Creek	7	0	22
Blackfoot River	3	0	0
Portneuf River	5	98	32
Snake abv American Falls	35	85	43

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1961-1990 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS
MAY 1, 2001





WATER SUPPLY OUTLOOK

April brought precipitation that was 135% of average, but also melted about 40% of the available snow in the Oakley and Salmon Falls basins. With this much melt, Goose, Trapper and Salmon Falls creeks did not even increase to average flow levels. This is not good news. The remaining snowpack in Goose and Trapper creeks is 28% of average. Salmon Falls and Bruneau basins snowpack is about 50% of average. There may still be enough snow to generate another peak in these basins, but it won't be high or last long. The only remaining snow in the Owyhee basin is in the higher elevations, 46% of average and more than twice the amount from last year. The Owyhee River peaked in March and is continuing its recession to baseflow levels. Residual forecasts are low and call for 25-55% of average for these high desert streams. Salmon Falls Reservoir is 19% full, and its users are projected to run out of water by the end of July. Oakley Reservoir is 42% full, and irrigation demand is already exceeding inflows. As of early May, shortages will occur. Wildhorse and Owyhee reservoirs are about 63% full. Brownlee Reservoir is full; however, the inflow forecast only calls for 31% of average for the May-September period. River runners should be ready if the Bruneau River increases, because there's not much snow up there to sustain the peaks for more than a few days unless rain occurs. Low streamflow levels will occur for the remaining summer months in these basins.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAY-JUL	2.9	4.6	6.0	30	7.6	10.3	20
	MAY-SEP	4.2	6.2	7.8	34	9.6	12.5	23
OAKLEY RESV STORAGE	MAY-31	24	27	28	70	30	33	41
	JUN-30	16.6	21	24	66	27	32	37
SALMON FALLS CREEK nr San Jacinto	MAY-JUL	8.4	13.1	16.8	30	21	28	57
	MAY-SEP	10.5	15.6	19.6	32	24	32	62
SALMON FALLS RESV STORAGE	MAY-31	35	41	46	49	51	57	93
	JUN-30	18.1	30	38	43	46	57	89
	JUL-31	1.5	12.8	21	32	28	40	64
BRUNEAU near Hot Springs	MAY-JUL	57	78	94	58	112	141	162
	MAY-SEP	61	83	100	58	119	149	173
OWYHEE near Gold Creek (2)	MAY-JUL	0.2	1.7	3.5	29	6.0	10.8	12.2
OWYHEE nr Owyhee (2)	MAY-JUL	0.6	6.8	17.3	30	28	43	58
OWYHEE near Rome	MAY-JUL	21	45	66	33	91	136	200
OWYHEE RESV INFLOW (2)	MAY-JUL	24	48	69	33	94	137	210
	MAY-SEP	29	54	76	32	101	145	238
SUCCOR CK nr Jordan Valley	MAY-JUL	0.05	0.05	1.32	26	3.10	5.71	5.10
SNAKE RIVER at King Hill (1,2)	MAY-JUL			1350	66			2038
SNAKE RIVER near Murphy (1,2)	MAY-JUL			1360	66			2077
SNAKE RIVER at Weiser (1,2)	MAY-JUL			1120	30			3793
SNAKE RIVER at Hells Canyon Dam (1,2	MAY-JUL			1310	31			4276
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	4190	6452	7480	44	8508	10770	16940
	MAY-SEP	4945	7562	8750	45	9938	12555	19650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	31.1	44.7	38.0
SALMON FALLS	182.6	34.5	75.0	81.9
WILDHORSE RESERVOIR	71.5	43.1	62.4	47.2
OWYHEE	715.0	470.7	631.9	619.0
BROWNLEE	1419.3	1400.2	1145.8	1007.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - May 1, 2001

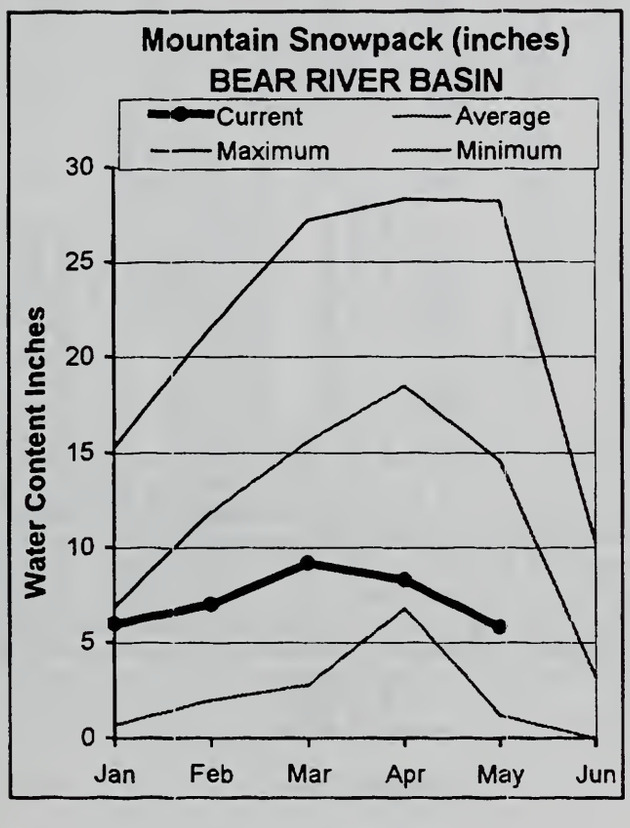
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	42	34
Goose-Trapper Creeks	4	76	28
Salmon Falls Creek	6	126	47
Bruneau River	5	117	53
Owyhee Basin Total	7	289	46

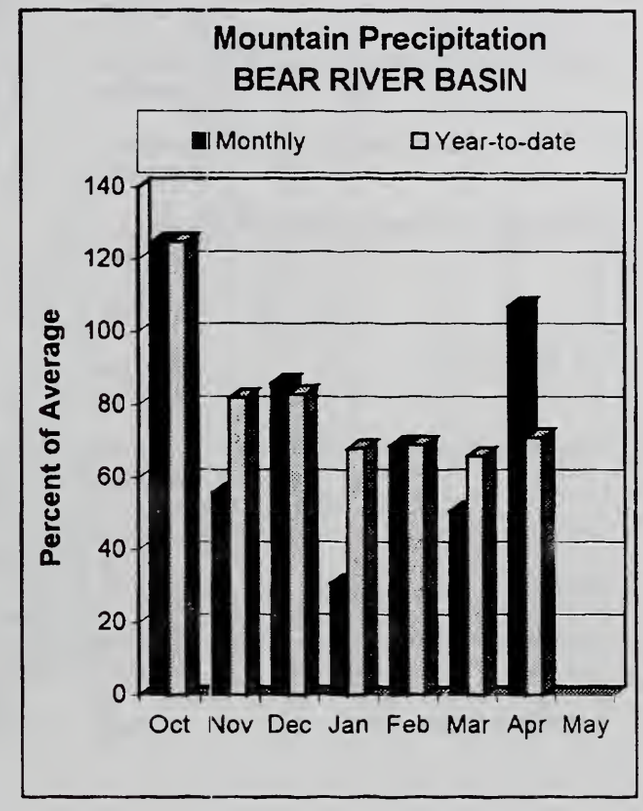
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN
MAY 1, 2001





WATER SUPPLY OUTLOOK

April precipitation was slightly above normal at 107% of average. Water year to date precipitation is 71% of average. About 1/3 of the snow melted during the last week in April. Streamflows showed a slight increase but were not very impressive and remain below average. The remaining snowpack is 40% of average in the Bear River basin and will not provide much more runoff for the system. Storage in Bear Lake increased one percentage point in March and two percentage points in April to 66% of capacity. Montpelier Creek Reservoir increased from 43% full March 30 to 55% full April 30. Streamflow forecasts are low and range from 19% of average for the Bear River below Stewart Dam to 26% for the Cub River. Streamflows will remain below normal for the rest of the season. Bear Lake irrigators should have an adequate water supply; however, other water users who do not have Bear Lake storage water will see shortages and a water year similar to 1992. Irrigators should stay in contact with their irrigation districts for more specific information.

BEAR RIVER BASIN
Streamflow Forecasts - May 1, 2001

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	MAY-JUL	2.6	11.7	30	34	48	75	88
	MAY-SEP	1.9	10.8	32	33	53	84	97
SMITHS FK nr Border, WY	MAY-JUL	31	36	40	44	45	52	92
	MAY-SEP	37	43	47	43	52	60	109
THOMAS FK nr WY-ID State Line (Disc.	MAY-JUL	3.1	4.1	5.0	19	6.1	8.1	27
	MAY-SEP	3.8	5.0	6.0	20	7.2	9.4	30
BEAR R blw Stewart Dam nr Montpelier	MAY-JUL	5.0	25	42	19	71	115	225
	MAY-SEP	3.0	24	50	19	84	135	264
MONTPELIER CK nr Montpelier (Disc)(2	APR-JUL	2.5	3.0	3.5	29	4.0	5.0	12.2
	APR-SEP	2.9	3.5	4.0	28	4.6	5.5	14.2
	MAY-JUL	1.70	2.14	2.50	28	2.92	3.67	9.10
	MAY-SEP	2.1	2.6	3.0	28	3.4	4.2	10.6
CUB R nr Preston	APR-JUL	4.2	8.9	12.0	26	15.1	19.8	47
	MAY-JUL	2.7	7.5	10.8	25	14.1	18.9	43

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	937.1	1136.0	1052.0
MONTPELIER CREEK	4.0	2.2	3.5	2.2

BEAR RIVER BASIN
Watershed Snowpack Analysis - May 1, 2001

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	85	52
Bear River ab WY-ID line	5	85	49
Montpelier Creek	2	105	60
Mink Creek	1	89	32
Cub River	1	50	37
Bear River ab ID-UT line	12	78	40
Malad River	1	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 12/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

BOUNDARY CREEK NEAR PORTHILL, ID – No Corrections

MOYIE RIVER AT EASTPORT, ID – No Corrections

SMITH CREEK NEAR PORTHILL, ID – No Corrections

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
+ PRIEST LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

CAMAS CREEK NEAR BLAINE – No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

LITTLE LOST R NR HOWE, ID - No Corrections (Disc)

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER
+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE RIVER AT NEELEY
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR – No Corrections
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised December 2000)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	46.70	646.50	--	693.2	INACTIVE+ACTIVE
DEADWOOD	--	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	24.90	37.00	413.10	--	450.1	INACTIVE+ACTIVE
ARROWROCK	--	--	272.20	--	272.2	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	7.90	5.80	159.40	--	165.2	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

ntroduction

ach month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise pecified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream flu... Water users need to know what the different forecasts represent if they are to use the information orrectly when making operational decisions. The following is an explanation of each of the forecasts.

ost Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow olume that can be produced given current conditions and based on the outcome of similar past situations, There a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance at the streamflow volume will be less than this forecast value.

he most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and e forecast equation itself. This does not mean that users should not use the most probable forecast; it means at they need to evaluate existing circumstances and determine the amount of risk they are willing to take by ccepting this forecast value.

o Decrease the Chance of Having Too Little Water

users want to make sure there is enough water available for their operations, they might determine that a 50 ercent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. o reduce the risk of not having enough water available during the forecast period, users can base their perational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-etween). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

o Decrease the Chance of Having Too Much Water

users want to make sure they don't have too much water, they might determine that a 50 percent chance of the treamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecas value.

10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecas value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts" or visit our Web page.*

USDA Natural Resources Conservation Service
9173 West Barnes Drive, Suite C
Boise ID 83709-1574

OFFICIAL BUSINESS

Issued by
Pearlie S. Reed, Chief
Natural Resources Conservation Service
Washington, DC

Released by
Richard Sims, State Conservationist
Natural Resources Conservation Service
Boise, Idaho

Prepared by
Snow Survey Staff
Ron Abramovich, Water Supply Specialist
Philip Morrisey, Hydrologist
Kelly Vick, Data Analyst
Bill Patterson, Electronics Technician
Jeff Graham, Electronics Technician

Cooperative funding for printing provided by
Idaho Department of Water Resources

Numerous other agencies provide funding
and/or cooperative support. Their cooperation
is greatly appreciated.